

Abstract

A method for improving the electrical conductivity of a substrate of metal, metal alloy or metal oxide comprising depositing a small or minor amount of metal or metals from Group VIIIA metals (Fe, Ru, Os, Co, Rh, Ir, Ni, Pd, Pt) or from Group IA metals (Cu, Ag, Au) on a substrate of metal, metal alloys and/or metal oxide from Group IVA metals (Ti, Zr, Hf), Group VA metals (V, Nb, Ta), Group VIA metals (Cr, Mo, W) and Al, Mn, Ni and Cu. The native oxide layer of the substrate is changed from electrically insulating to electrically conductive. The step of depositing is carried out by a low temperature arc vapor deposition process. The deposition may be performed on either treated or untreated substrate. The substrate with native oxide layer made electrically conductive is useable in the manufacture of electrodes for devices such as capacitors and batteries.

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